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PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional)
		ES-1035-492
	Application Number	Filed
	10/764,444	January 27, 2004
	First Named Inventor	
		DAIROKU
	Art Unit	Examiner
	1791	Huson
<p>Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.</p> <p>This request is being filed with a notice of appeal.</p> <p>The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.</p> <p>I am the</p> <p><input type="checkbox"/> Applicant/Inventor</p> <p><input type="checkbox"/> Assignee of record of the entire interest. See 37 C.F.R. § 3.71. Statement under 37 C.F.R. § 3.73(b) is enclosed. (Form PTO/SB/96)</p> <p><input checked="" type="checkbox"/> Attorney or agent of record      40,177 (Reg. No.)</p> <p><input type="checkbox"/> Attorney or agent acting under 37CFR 1.34. Registration number if acting under 37 C.F.R. § 1.34 _____</p> <p>NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.*</p> <p><input checked="" type="checkbox"/> *Total of 1 form/s are submitted.</p>		

  
\_\_\_\_\_  
Signature

Eric Sinn  
\_\_\_\_\_  
Typed or printed name

703-816-4886  
\_\_\_\_\_  
Requester's telephone number

June 17, 2010  
\_\_\_\_\_  
Date

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**STATEMENT OF ARGUMENTS IN SUPPORT OF  
PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Claims 1-3, 6-11 and 13-22 stand rejected under 35 U.S.C. 103 as allegedly obvious in view of a combination of Golander (U.S. Patent No. 4,840,851) and Vesley (U.S. Patent No. 6,960,275). Further, Claim 12 stands rejected under 35 U.S.C. 103 as allegedly obvious in view of a combination of Golander, Vesley and Phan (U.S. Patent No. 6,022,610). The Final Rejection includes the errors that follow:

**Error #1 The combination of Golander and Vesley does not render obvious the claim limitation of “a water-soluble ethylenically unsaturated monomer containing at least 50 mol% of acrylic acid” of the pending claims.**

The claimed invention is directed to a method of manufacturing a water-absorbing shaped body which can be produced to avoid the use of thickening agents and thus to avoid (1) handling problems and high labor costs due to high viscosity when thickening agents are used and (2) deteriorating performance of water-absorbing shaped bodies produced with thickening agents. See, page 3, last paragraph of the Application. To achieve this goal, the claimed methods include the steps of: (1) polymerizing an aqueous solution including a photo polymerization initiator, a radical polymerization initiator and a water-soluble ethylenically unsaturated monomer containing at least 50 mol% of acrylic acid, an acrylic acid salt or both by radiating light intermittently onto the aqueous solution; (2) applying heat after the light is radiated; (3) shaping the polymerized aqueous solution; and (4) drying the water-absorbing shaped body obtained after the polymerization. In another embodiment, the claims refers to the steps of (1) a first polymerization step of radiating light onto an aqueous solution (optionally without a thickening agent, see claim 22) including a photo polymerization initiator and a water-soluble ethylenically unsaturated monomer containing at least 50 mol% of acrylic acid, an acrylic acid salt or both, to polymerize a part of the water-soluble ethylenically unsaturated monomer to thicken the aqueous solution; (2) stopping radiation of the light, and shaping into a desired shape the aqueous solution thickened in the first polymerization step; and (3) a second polymerization step of radiating light onto the aqueous solution shaped in the shaping step. In another embodiment, the claimed method involved the steps of: (1) polymerizing an aqueous solution without the presence of a thickening agent and including a photo polymerization initiator and a water-soluble ethylenically unsaturated monomer containing at least 50 mol% of acrylic acid, an acrylic acid salt or both by

radiating light intermittently onto the aqueous solution until the aqueous solution becomes viscous and shapeable; (2) shaping the polymerized aqueous solution; and (3) drying the water-absorbing shaped body obtained after the polymerization. See, independent claims 1, 7, 21 and 22. None of the problems of conventional methods were recognized and none of the solutions provided by the claimed methods were made obvious by a combination of the cited references.

Golander is in “the field of surface coating of a substrate” - i.e., applying a polymeric coating containing ethylene oxide units as the primary structural units; see Golander, col. 1, lines 7-10. While Golander describes the curing of a polymeric product, there is no discussion or suggestion to the shaping a partially cross-linked gel. Furthermore, Golander’s materials are quite distinct from those specified in the claimed methods (discussed further below).

Vesley is cited for a procedure in which a viscous aqueous solution is (1) polymerized by irradiating the aqueous solution with light and (2) shaped into a film. There is no disclosure in Vesley of (a) initial irradiation, (b) completely stopping the radiation with light, (c) shaping the thickened aqueous solution in a shaping step and (d) final irradiation and cure. As with Golander, Vesley uses a very different polymeric solution primarily based on viscoelastic materials (Vesley, col. 1, lines 18-20 and col. 6, lines 28-39). Vesley’s viscoelastic pressure sensitive materials are prepared using a release surface to which the materials are applied then irradiated or otherwise cured. Like Golander, Vesley is very different from the claimed invention.

The cited references do not render obvious all of the limitations of the claims. The claimed invention is directed to, methods involving a water-soluble ethylenically unsaturated monomer containing “at least 50 mol% of acrylic acid, an acrylic acid salt or both.” Further, claims 19 and 20 further limits the “mol% of acrylic acid, an acrylic acid salt or both” to at least 80% mol% or at least 95% mol% respectively. These limitations are not obvious by the cited references. The cited references does not describe or render obvious an acrylic acid or an acrylic acid salt or both which constitutes at least half (claim 1), at least 80 mol% (claim 19) or at least 95 mol% (claim 20), of the ethylenically unsaturated monomer. Also, since 50 mol% of an acrylic acid or an acrylic acid salt or both is not obvious, it follows that an even higher range of at least 80 mol% (claim 19) or at least 95% (claim 20) is even more non-obvious to one of ordinary skill in the art.

**Error #2 The combination of Golander and Vesley does not teach or render obvious a radical polymerization initiator or the application of heat after light.**

With respect to claims 1-3 and 6, the cited references do not render obvious the claimed of features of (1) an aqueous solution with a radical polymerization initiator and (2) applying heat after the light is radiated.

Golander does not disclose the use of a composition comprising a free radical polymerization initiator in combination with a water-soluble ethylenically unsaturated monomer containing “at least 50 mol% of acrylic acid, an acrylic acid salt or both.” While Golander refers to a radical initiator, it is only in the context of Colander’s specific compositions which, as described above, differs significantly from the claimed compositions. Vesley is silent with respect to a free radical polymerization initiator and does not cure the defects of Golander.

With respect to the second point, Appellants agree with the Examiner that Golander does not show apply heat after light radiation (final Office Action, page 3, lines 7-8). The passage in Vesley which the Examiner points out as disclosing applying heat after the light (final Office Action, page 3, first paragraph) refers only to applying heat instead of light. Unlike the claimed invention, Vesley never disclose the combination of polymerization followed by shaping followed by a second polymerization after shaping. Thus, cited references do not disclose (1) application of heat after light and (2) a method involving a composition comprising an acrylic acid or an acrylic acid salt or both which constitutes at least half (claim 1), at least 80 mol% (claim 19) or at least 95 mol% (claim 20), of the ethylenically unsaturated monomer

Furthermore, in the invention recited in independent claim 1, a heat source in “applying heat after the light is radiated” is intended and implicit to be the heat of polymerization instead of heat applied from an external source. Though there is no description in the specification with regard to this point, it is common general technical knowledge known to a person skilled in the art that heat, which is generated by the polymerization, increases the temperature of the aqueous solution; namely, the heat is applied to the aqueous solution. Accordingly, a distinction from the prior art is that Appellants are able to use with advantage the heat generated from the polymerization reaction which is used for “applying” or generating heat after the intermittent radiating light is employed. None of these limitations are rendered obvious by a combination of Golander and Vesley.

**Error #3 The combination of Golander and Vesley does not teach or render obvious the claim limitation of drying the water-absorbing shaped body subsequent to polymerization.**

Claims 1 and 21 recites, in addition to polymerization, two additional steps of (1) shaping the polymerized aqueous solution, and (2) drying the water-absorbing shaped body obtained after polymerization. The combination of Golander and Vesley failed to teach the step of drying a water-absorbing shaped body obtained from polymerization.

**Error #4 The combination of Golander and Vesley does not teach or render obvious the claim limitation of shaping of a partially polymerized solution or two polymerization steps.**

A combination of Golander and Vesley does not render claims 7-15, 17, 18, and 22 obvious because these claims recites that there is a first polymerization step to polymerize part of the monomer and thicken the aqueous solution followed by stopping the radiation, a shaping step to shape the thickened aqueous solution which is then followed by a second polymerization to polymerize the solution. While Golander describes at column 7, lines 11-26, partial then final curing, it is important to note that Golander does not render obvious the shaping of a partially cross-linked composition. Further, not only does Golander not describe the shaping of a partially cross-linked gel, Golander does not describe the shaping of a partially cross-linked gel with a water-soluble ethylenically unsaturated monomer containing “at least 50 mol% of acrylic acid, an acrylic acid salt or both” as recited in the claims.

Also, there is no disclosure in Vesley of initial irradiation, completely stopping the radiation with light, shaping the thickened aqueous solution in a shaping step and followed by final irradiation and cure as recited in Appellants’ claims. Appellants submit that the part of Vesley which is indicated by the examiner as pertinent fails to disclose a shaping step. Since every limitation of a claim must be addressed in an obviousness rejection, the omission of a claimed shaping step in Golander and Vesley renders the claims non-obvious.

Figure 1 of Vesley (indicated by the examiner to be pertinent) merely discloses coating a curable composition onto a surface and curing said coating while the coating is peeled off. Significantly, Vesley’s process completely fails to disclose an arrangement corresponding to the arrangement of (1) stopping the radiation of light, and (2) shaping an aqueous solution which includes a polymer as a part thereof (a shaping step). Appellants note that Vesley does not show anywhere that the shape of the product is changed. That is, the Vesley shows a process where an article is treated by multiple sources. There is no indication that the radiation of light is stopped and there is no indication that a shaping process is involved between two polymerizations - of course, since there is no stoppage, Vesley’s process cannot be considered two polymerizations

(see Vesley, column spanning cols. 4 and 5). Vesley is merely treating a product with two sources in Figure 1 without any indication of shaping or changing the shape of the product. For this reason, a combination of Golander and Vesley would not lead to the claimed invention. Also, as with Golander, Vesley also uses a very different polymeric solution and the combination of cited references cannot be said to use a composition as specified by the claims.

**Error #5 The combination of Golander, Vesley and Phan does not teach or render obvious the claim limitation of “the shaping step is performed on a fiber base material or inside a fiber base material” in claim 12 and in fact teaches away from such a limitation.**

The Office Action takes the position that claim 12 is obvious because Golander and Vesley teach all the claim limitations except for a fiber substrate and that Phan provides teaching of fiber substrates. Appellants note that Phan discloses that “deposition of an osmotic absorbent onto a capillary substrate according to the prior art can present numerous problems (see, Phan, col. 2, lines 10-44). To overcome these problems, Phan uses (1) specific absorbents with a proximal end jointed to the fibrous capillary substrate and (2) a distal end freestanding from said capillary substrate, (3) a fibrous capillary substrate comprising regions of two different densities with a plurality of discrete low density regions and (4) wherein said sites of the osmotic absorbent hydrogel polymers are disposed on said low density regions to overcome these many problems (see, Phan, claims). Phan’s disclosure of the many problems and the specific structures needed to overcome these problems is a teaching against the use of any water absorbing shaped bodies in any fiber substrates. The Office Action also fails to show that Golander and Vesley’s compositions would fit Phan’s strict criteria (i.e., items (1), (2), (3) and (4) above). Since Phan indicated that only specific structures would work, there is no indication that Golander and Vesley (which would not fit Phan’s criteria) would have any expectations of success in combination with Phan.

We note that claim 12 is a dependent on independent claim 7 which is not obvious as argued above. Thus, claim 12 should be non-obvious for the same reasons as claim 7.

For the reasons stated above, the withdrawal of all of the Section 103 rejections of the March 17, 2010 final Office Action is requested because the claims would not have been obvious to one of ordinary skill in the art when this invention was made. The allowance of the pending claims is respectfully requested.